

Abstract

Through the Engrossed Substitute House Bill 2496 process, the habitat conditions of salmon-producing watersheds within WRIA 24 (with the exception of Chinook River watershed) were reviewed and summarized. Major and minor habitat factors that limit salmonid production are summarized below by watershed. Detailed reports for each of these factors are discussed within the body of the report. This first round report examines salmon and steelhead trout habitat conditions. Later versions will address the habitat issues for other salmonids.

Cedar River

The Cedar River does not currently support salmon production. However, historically the Cedar River supported coho and chum salmon. Tidegates are a major habitat problem for this river. Documentation of other habitat issues was scant for this watershed.

North River Watershed

Major habitat factors that limit salmon production in the North River Watershed include a current low level of large woody debris (LWD) throughout the basin, coupled with poor riparian conditions along the mainstem North, upper Little North, and Vesta Creek. Other major factors are excess sediment inputs from the dense network of roads, and loss of estuary habitat primarily due to dikes and tidegates. Less extensive problems include culverts throughout the freshwater coho salmon and steelhead trout areas, and channel incision, which has disconnected the river from its floodplain and associated salmon rearing areas. Peak water flows resulting from the young age of the surrounding forests are believed to contribute to channel incision. Channel incision is worsened by the lack of LWD.

Some areas (Vesta Creek, Little North River, and Redfield Creek.) have naturally low levels of gravel recruitment limiting available spawning habitat, and existing spawning habitat in this region should be protected. However, the current lack of LWD worsens the naturally low levels of spawning gravels. Pool habitat is below adequate levels, and is also a result of low LWD levels and channel incision. High summer water temperatures is another salmon habitat problem in this watershed, and poor shading from the altered riparian zones is one major cause of this problem.

Smith Creek

Spawning gravels and LWD are lacking in this basin. Previously, spawning gravel pads increased the level of spawners in these reaches, but these have been washed out or inundated by fines. Sedimentation is naturally high throughout the sub-basin, but is worsened by road-produced sediments and landslides.

Willapa Watershed

The lack of LWD is a major habitat problem for salmon throughout the Willapa Watershed. The Willapa watershed also has the highest density of roads, the greatest number of roads that cross streams, and the greatest quantity of roads in the riparian areas within the WRIA. Mass wasting sites are numerous, and combined with the road density, worsen sediment loads within the basin. The sedimentation is believed to contribute to filling (reducing) pool habitat and increasing fines, scour, and channel incision. High levels of fine sediment are a problem in the mainstem and north tributaries. These areas also have naturally low recruitment of spawning gravels, a condition that is worsened by the lack of LWD to store gravel. Scour is a significant concern in the upper mainstem, Stringer Creek, Ellis Creek, Trap Creek, and Forks Creek. Poor riparian conditions are major problems throughout the mainstem as well as in some tributaries (see Riparian Chapter for details). Other major limiting factors include high water temperatures and low dissolved oxygen in the summer months, as well as tidegates, which are barriers to estuary habitat.

Less extensive habitat problems include culverts throughout the freshwater habitat and dikes in the lower mainstem. Channel incision throughout the mainstem has further segregated the channel from historical rearing areas, and incision to bedrock has contributed (along with the lack of LWD) to few available pools for salmon. The incision is worsened by the lack of LWD and the increased sediment load from mass wasting and roads. Water turbidity is a problem in upper Fern Creek, and low flows are a problem in the upper mainstem Willapa. Stringer Creek is impacted by water withdrawals, and the dam prevents the downstream recruitment of spawning gravels. About 19% of the estuary habitat has been lost due to dikes for urban development and roads that act as dikes.

Palix Watershed

The primary salmonid habitat problems within the Palix Watershed include a significant lack of stable LWD, high road densities and road sediment inputs, extensive channel incision, and a high level of estuarine habitat loss. Gravel recruitment is fair within most channel segments of the Palix River, but incised channels require very large pieces of LWD, preferably with attached rootwads, to maintain the gravel within the needed areas. An increase in LWD would not only allow gravel storage, but would also serve to reverse the effects of channel incision by increasing instream bed elevations through gravel and sediment storage. The loss of estuarine wetlands habitat is extensive (at least 31% of historic estuarine wetlands area has been lost) primarily as a result of diking.

Minor habitat problems include a small number of freshwater culverts where fish passage is impeded, and high water velocity in the winter, which could be improved with an increase of stable, very large, woody debris.

Nemah Watershed

In the North Nemah River, major problems include high inputs of fine sediment primarily from forest roads, poor riparian conditions, a lack of LWD, floodplain loss (mostly due to riparian roads), and road-related mass wasting. The Middle Nemah River also has poor riparian conditions and a lack of LWD. The sediment inputs are not currently major problems, but if the Middle Nemah A-Line road is used for logging again, it will likely become a significant sediment problem. This road has also resulted in a significant loss of floodplain area. Diking has resulted in considerable losses of estuarine wetlands habitat in the Middle Nemah. The South Nemah River is significantly impacted by diking of estuarine wetlands and a loss of riparian shade/canopy in the lower reaches. Freshwater barriers such as culverts are a problem, although not a major limiting factor throughout the Nemah system.

Naselle Watershed

Major limiting factors throughout the Naselle Watershed include a lack of LWD coupled with poor riparian conditions (44% of the riparian consists of hardwoods, open, or young conifer). An exception to this is the mature forest in the East Fork Naselle, a critical habitat area that contributes to important salmon habitat functions. Other major habitat problems include a large number of culverts, tidegates, and riparian roads. Another extensive problem is sedimentation stemming primarily from a large number of landslides and secondarily from roads, particularly in Salmon Creek. Another major habitat problem for salmon is high water temperatures in the summer months.

Lessor problems include estuary loss due to diking, as well as concerns about the possible change in flows due to the watershed condition, with higher high flows and lower low flows as the hydrologic maturity of the surrounding forest is reduced.

Bear River Watershed

Major salmonid habitat problems in the Bear River Watershed include a lack of LWD, excessive sedimentation from landslides and roads, and a large loss of estuarine habitat. Less significant habitat problems include an immature riparian forest, which consists of young conifer and will take time to mature, as well as a concern that the reduction in hydrologic maturity is resulting in possible higher high flows and lower low flows. Culverts are few in number, but those that block salmon access should be considered a minor restoration activity.